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| EXAMINER | |
|---|---|
| NGUYEN, STEVE N | |
| **ART UNIT** | **PAPER NUMBER** |
| 2117 | |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/701,332 | AGRAWAL ET AL. | |
| | Examiner | Art Unit | |
| | STEVE NGUYEN | 2117 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *17 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *15-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

Claims 15-26 are currently pending and have been examined.

### *Claim Rejections - 35 USC § 112*

The U.S.C. 112, second paragraph rejection of claims 15 and 21 is maintained in view of the amended claims.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15 and 21 rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. Claims 15 and 21 recite, "adding access to additional redundant memory which without using the additional redundant memory to replace functional memory". The omitted structural cooperative relationships are: the relationship between the additional redundant memory and its access without using the additional redundant memory to replace functional memory.

It appears that the negative limitation "without using the additional redundant memory to replace functional memory" was recited to overcome the prior art. This negative limitation renders the claim indefinite because it appears to be an attempt to claim the invention by excluding what the inventors did not invent rather than distinctly

and particularly pointing out what they did invent. In re Schechter, 205 F.2d 185, 98 USPQ 144 (CCPA 1953).

The claim does not clearly recite the essential element of how access is added to additional redundant memory. Instead, the claim attempts to claim that feature by excluding the prior art using the limitation that access is added to additional redundant memory "without using the additional redundant memory to replace functional memory".

### *Response to Arguments*

Applicant's arguments filed 10/17/2008 have been fully considered but they are not persuasive.

Applicant argues that "Even if Frankowsky can be said to disclose testing the functional memory (block 22 in Fig. 2), repairing the memory (block 24 in Fig. 2), and then testing the repaired memory (block 28 in Fig. 2), the subsequent step of repairing (block 30 in Fig. 2) does not consist of adding access to additional redundant memory without using the additional redundant memory to replace functional memory, wherein the additional redundant memory is not required for the repair."

The Examiner asserts that the teachings of Frankowsky summarized by Applicant above were not made in any Office Action. To clarify, Frankowsky teaches a method for testing memory, said method comprising:

- testing functional memory (Fig. 2, 22; col. 2, lines 49-51);
- repairing the functional memory by adding access to redundant elements (Fig. 2, 24; col. 2, lines 51-52);

- after repairing the functional memory by adding access to redundant elements, adding access to additional redundant memory without using the additional redundant memory to replace functional memory (col. 2, lines 63-65), wherein the additional redundant memory is not required for the repair (col. 2, line 66); and
- after repairing the functional memory and adding access to the additional redundant memory which has been added which was not required for the repair, testing the additional redundant memory which has been added which was not required for the repair (col. 2, lines 65-67).

Applicant argues that the redundant memory in Tanishima is required for a repair, and there is no forced usage of redundant elements where the redundant elements are not needed to be used for repairing the memory.

The Examiner asserts that the redundant elements are not needed to be used for repairing the memory of Tanishima as explicitly disclosed in col. 8, lines 5-8.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 15, 16, 21, and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Frankowsky (US Pat. 6,961,880) in view of Miller et al (US Pat. Pub. 2003/0237061; hereinafter referred to as Miller).

As per claims 15 and 21:

Frankowsky teaches a method for testing memory, said method comprising:

- testing functional memory (Fig. 2, 22; col. 2, lines 49-51);
- repairing the functional memory by adding access to redundant elements (Fig. 2, 24; col. 2, lines 51-52);
- after repairing the functional memory by adding access to redundant elements, adding access to additional redundant memory without using the additional redundant memory to replace functional memory (col. 2, lines 63-65), wherein the additional redundant memory is not required for the repair (col. 2, line 66); and
- after repairing the functional memory and adding access to the additional redundant memory which has been added which was not required for the repair,

testing the additional redundant memory which has been added which was not required for the repair (col. 2, lines 65-67).

Not explicitly disclosed by Frankowsky is re-testing the functional memory which has been repaired. However, Miller in an analogous art teaches re-testing the functional memory which has been repaired (Fig. 1; 16). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to re-testing the functional memory which has been repaired. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that doing so would have ensured that the repair was effective (Miller; paragraph 5).

As per claims 16 and 22:

Frankowsky further teaches using repair information to repair the memory (col. 2, lines 51-54).

Claims 17-20 and 23-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Frankowsky in view of Miller in view of Tanishima et al (US Pat. 6,999,357; hereinafter referred to as Tabishima).

As per claims 17-20 and 23-26:

Frankowsky and Miller substantially teach the testing mode and method as detailed above. However, not explicitly disclosed is forcing usage of redundant elements which are not needed to be used for repairing the memory; and checking interaction between redundant elements.

However, Tanishima in an analogous art teaches forcing usage of redundant elements which are not needed to be used for repairing the memory; and faking defects to remap good elements with redundant elements (col. 6, lines 30-44 and col. 7, line 66 to col. 8, line 8). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to force usage of redundant elements which are not needed to be used for repairing the memory. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that doing do would have enabled one to perform testing on the redundant memories without actual replacement with the redundant memory cell array (Tanishima; col. 8, lines 5-8).

## ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVE NGUYEN whose telephone number is (571)272-7214. The examiner can normally be reached on M-F, 10am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques can be reached on (571) 272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cynthia Britt/
Primary Examiner, Art Unit 2117

Steve Nguyen
Examiner
Art Unit 2117